ABSTRACT

RELEASE OF P-METHOXYCINNAMIC ACID IN SOLID LIPID NANOPARTICLES SYSTEM WITH BEESWAX AND GLYCERYL MONOSTEARATE LIPID COMBINATION

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The research objective is to investigate the effect of lipids combination of beeswax and glyceryl monostearate formed in SLN on the release of p-methoxycinnamic acid. Drug release measured with apparatus-5-paddle overdisk in phosphate buffer 7.4 ± 0.05, temperature 32°C, 100 rpm, with diffusion cells using celophan membrane within 11 hours. The drug release rate named flux, calculated from slope of linear regression between √t versus the cumulative amount of released p-methoxycinnamic acid on steady state. Flux of p-methoxycinnamic acid SLN with beeswax, glyceryl monostearate combination, and SLN with glyceryl monostearate were 121,82 ± 2,7046 µg/cm²/min¹/₂, 103,4817 ± 6,7831 µg/cm²/min¹/₂ and 100,8933 ± 4,9545 µg/cm²/min¹/₂. Flux was also evaluated using one way ANOVA statistical test continued with HSD test. Research result shows the effect of lipids combination of beeswax and glyceryl monostearate formed in SLN on the release of p-methoxycinnamic acid formed decreased compared with SLN with beeswax but there were no difference compared with SLN with glyceryl monostearate.

Key words: p-methoxycinnamic acid, solid lipid nanoparticles (SLN), beeswax, glyceryl monostearate, drug release